



# THE NATIONAL Voter

LEAGUE OF WOMEN VOTERS OF THE U. S.

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## WATER FRONT REVISITED

In an article entitled "National Water Resources Administration," Professor James Fesler points out that the variety and complexity which are "at the heart of the problem of organizing for water resources administration" make the observer feel as if he were looking into "a steadily rotating kaleidoscope in which each mosaic pattern yields to another before the first can be fully registered on the consciousness." The regional bits and pieces which make up the national mosaic are well illustrated by Professor Fesler's account of one day's proceedings in the United States Senate (February 4, 1957):

"Senator Ives introduced and explained a bill for construction of a hydroelectric power project at Niagara Falls by the New York State Power Authority. Senator Neuberger, from across the continent, introduced and spoke for a resolution proposing a Columbia River basin account, through which federal power revenues would help finance irrigation and reclamation projects. Senator Beall obtained unanimous consent to publish in the *Congressional Record* appendix an editorial on pollution problems of the upper Potomac River. Senator Symington protested alleged neglect of Missouri in the administration of drought relief by Secretary of Agriculture Benson. The Senate adopted Senator Murray's joint resolution for a National Conservation Anniversary Commission to celebrate the 50th anniversary of the 1908 Conservation Conference of State Governors called by President Theodore Roosevelt. Senator Carlson seized this opportunity to urge Senator Murray and his Committee on

Interior and Insular Affairs to give favorable consideration to Senator Carlson's bill to establish a commission on the conservation, development, and use of renewable natural resources and particularly 'problems of drought, decreasing water supply, and the wind erosion of our soil.'"

Though most of these proposals affected only one region, once up for a final vote in Congress each proposal had to be accepted or rejected by every Senator or Representative voting. In the absence of a "national water policy," by what standards can Congress make such decisions? Yet, issue by issue, decision by decision, Congress is helping shape water resource practices for the nation as a whole.

### The Problem

How do we sharpen the decision-making process in water-resource development? How can intelligent choices be made concerning problems which are so varied and so widespread? How can we develop the kind of national perspective which can transcend "a disparate assemblage of specific projects in the districts of the individual Congressmen"? How can we find ways of satisfying what has been described as "the area orientation of Congressmen, the national orientation of the President, and the functional orientation of the several water resources agencies"?

Those who are looking to the future stress the problems inherent in the growth of population, the rise of living standards, and the expanding uses of water. Added to these is the continuing process of urbanization, of increasing dependence on science

and technology.

Most students of water-resource development stress not the potential deficiencies in water *per se* but rather the question whether the water-resource potential in this country will be soundly developed and managed.

Underlying the water-resource challenge relating to the nature of our changing society is the undeniable dependence which man has on water. Civilizations have flourished only where on the one hand water supply was adequate and assured, and on the other hand where an overabundance of water was under control.

The challenge of development and management of our resources implies a growing need for government—at all levels—to assume the responsibilities required of it. The next question is whether current machinery is adequate to meet the challenge.

To answer this last question it is necessary to examine the concepts generally accepted as essential ingredients to sound water-resource development.

### How Single Became Multiple

Multi-purpose development, one of several major concepts, means that for optimum conservation and development of water resources, all the varied uses of water should be considered, and each use should be developed in a way consistent with the development of the others and in a way which will produce the greatest total good.

Some farsighted men had the vision of multi-purpose development at the turn of the century. However, before the vision could be translated into reality, certain engineering tech-

niques had to be perfected, such as the development of concrete adequate for dams of great heights, and the improvement of transmission of electricity over long distances. Certain widely accepted views had to be overcome, such as the belief that it was impracticable in terms of safety and economy to combine purposes.

The building of Hoover Dam in 1928 represented the first large multi-purpose effort. During the depression of the early 30's a whole series of projects for two or more purposes, including TVA, Grand Coulee Dam, Central Valley of California, Bonneville Dam, and the upper Ohio River, were made possible by grants and loans for public works.

Since multi-purpose projects came into being surrounded by a framework of single-purpose planning, the newer concept must be studied in relation to historical origins as well as current practices of federal water agencies.

The federal government's responsibility for water resources is divided among 25 federal agencies—20 in six Departments, and five independent agencies—each (with the exception of TVA) with a *traditional* function entrusted to it by Congress. Historically, the administrative dispersion at the federal level can be traced to the single-purpose origins of these agencies.

During the 19th and early 20th centuries, the federal government accepted from time to time various degrees of responsibility for the development or control of various water programs: navigation and flood control in the 19th century; irrigation at the turn of the century; power generation, pollution control, and recreation after the beginning of the 20th century.

Another historical fact to keep in mind is that the 25 federal agencies were not set up according to the concepts discussed in this article, but rather in response to crises such as floods, and to the pressure of regional and economic expansion.

More specifically, the federal government first got into water-resource development as a means of expanding the nation westward.

### "The Big Three"

**The Army Corps of Engineers**, which had been in existence since 1802, undertook civil functions in 1824 when Congress directed the

## UNITED STATES GOVERNMENT EXECUTIVE BRANCH WATER RESOURCE DEVELOPMENT\*

| FEDERAL AGENCY                            | PURPOSE | Municipal and Industrial | Irrigation | Flood Control | Pollution Control | Navigation | Drainage | Power Generation and Transmission | Recreation Fish & Wildlife | Watershed Treatment |
|---|---------|--------------------------|------------|---------------|-------------------|------------|----------|-----------------------------------|----------------------------|---------------------|
| Department of the Army                    |         |                          |            |               |                   |            |          |                                   |                            |                     |
| Corps of Engineers—                       |         |                          |            |               |                   |            |          |                                   |                            |                     |
| Civil Functions                           |         | X                        | X          | X             | X                 | X          | X        | X                                 | X                          |                     |
| Department of the Interior                |         |                          |            |               |                   |            |          |                                   |                            |                     |
| Bureau of Reclamation                     |         | X                        | X          | X             | X                 | X          | X        | X                                 | X                          | X                   |
| Bureau of Indian Affairs                  |         | X                        | X          | X             |                   |            | X        | X                                 |                            | X                   |
| Bureau of Land Management                 |         | X                        |            | X             |                   |            | X        |                                   | X                          | X                   |
| Geological Survey                         |         | X                        | X          | X             |                   | X          | X        | X                                 |                            | X                   |
| Department of Agriculture                 |         |                          |            |               |                   |            |          |                                   |                            |                     |
| Soil Conservation Service                 |         | X                        | X          | X             |                   |            | X        |                                   | X                          | X                   |
| Department of Health, Education & Welfare |         |                          |            |               |                   |            |          |                                   |                            |                     |
| Public Health Service                     |         | X                        |            |               | X                 |            |          |                                   | X                          |                     |
| Department of State                       |         |                          |            |               |                   |            |          |                                   |                            |                     |
| International Boundary & Water Commission |         | X                        | X          | X             | X                 |            |          | X                                 |                            |                     |

\* Multiple-purpose responsibilities of agencies originally established for a single purpose are illustrated by above chart of the activities of eight of the 25 major federal agencies charged with administration of water resources.

Corps to clear a navigation channel down the Ohio and Mississippi Rivers. This assignment was part of the process of pushing the frontiers westward by the development of waterways. The civil function of the Corps was confined to navigation improvements for nearly a century, although flood control was often a by-product of its undertaking.

**The Bureau of Reclamation**, created under the Reclamation Act of 1902, was a part of the homestead concept for developing the arid West. The 1902 Act was necessitated primarily because efforts to secure such development through private or state financing had largely failed.

Similarly, the assumption of flood control responsibilities by the federal government was an outgrowth of flood catastrophies. Prior to the 20th century, floods were generally accepted as "acts of God." However, beginning in 1917, the Corps of Engineers was permitted to construct certain flood projects on the Mississippi and Sacramento Rivers. Prior to 1936, most federal flood control activities were concentrated in the Mississippi Valley, and these were in response to catastrophies such as the Mississippi flood of 1927, which meant the loss of 313 lives and \$300 million in property.

Terrific pressure for federal action

was brought to bear in 1936, following widespread March floods resulting in \$2 billion damage from Maine to Ohio, on top of scattered floods in 1935. The result was the first federal Omnibus Flood Control Act. Under the 1936 Act, flood damage was recognized as a matter of national concern and the Corps of Engineers was authorized to build flood works across the country.

**The Soil Conservation Service** in the Department of Agriculture was given the permanent assignment of retarding water flow and preventing soil erosion on watersheds through various upstream flood prevention devices. Although the Department already had responsibilities for soil conservation, it was not equipped for immediate implementation of such a program. World War II intervened, and Congress did not appropriate the first funds for watershed control until 1946.

In recent years these single-purpose agencies have broadened their activities to cover the concept of multi-purpose planning. As the accompanying chart indicates, most of the federal agencies have more than one job. Furthermore, multi-purpose water-resource development has been the official policy of the federal government since 1927, with the inauguration of "308" reports (so-called

because of the House document number) which brought together four federal water functions which had grown up along separate lines, namely, navigation, flood control, irrigation, and power policy.

Theoretically, then, the federal agencies today are operating for multiple purposes. For example, the Corps of Engineers, under the Flood Control Act of 1944 which gave the Corps authority to develop major drainage projects, constructs reservoirs on so-called main-stem rivers to store flood waters as a means of flood control. Controlled releases from these reservoirs also provide supplies of water downstream for irrigation (in the 17 western states), municipal and industrial use, as well as navigation.

The Bureau of Reclamation originally concentrated on single-purpose irrigation projects. Although the reservoirs constructed by the Bureau on the main-stem rivers of the 17 western states store water primarily for irrigation purposes, frequently space is reserved to capture the peak period of floods.

The Soil Conservation Service is the Johnny-come-lately to the field of water development. The Flood Control Act of 1936 gave the SCS responsibility for upstream work on the nation's river basins. Recently the SCS has placed increased emphasis on its flood control responsibilities, which consist of treating the small watersheds on river tributaries ("upstream flood prevention") through water retention devices and soil erosion control. SCS activities also include federal assistance to municipal and industrial water users.

As long as the Corps', Bureau's and SCS' participation in water functions were limited and single-purpose planning was the rule, overlapping and duplication of effort were minimal. With the advent of river basin planning came the introduction of continuing problems of policy and administration.

### Region and River Basin

In addition to multi-purpose planning, two other concepts generally accepted among water-resource authorities today are basin-wide development and comprehensive regional development.

The first is a direct descendant of Theodore Roosevelt's famous statement: "Each river system from its

headwaters in the forest to its mouth on the coast, is a unit and should be treated as such."

The great Mississippi flood of 1927 highlighted the need for planning for the whole river basin. This flood dramatized the failure of the Corps of Engineers' plans, which had sought to control flooding and maintain navigation along the main stem without related planning for the tributaries.

Hence the Rivers and Harbors Act of 1927, under which the comprehensive inclusion of all parts of a basin in a single report was required and the possibility of multi-purpose projects for at least four major purposes was recognized.

The concept of regional development means that water-resource planning is extended to encompass all aspects of natural resources related to economic growth, including even cultural conditions of life. This concept has never been fully realized, though it was implicit in the Hoover Dam project and in the Tennessee Valley Authority. The Hoover Dam was recognized as likely to promote economic growth in the lower Colorado basin and in Southern California. The TVA was regarded as a means of stimulating growth in what was known as a backward and depressed region. Although the ideal of fully integrated river-basin development has not yet been achieved, the TVA is considered to be the prototype of unified basin-wide programs of multi-purpose projects.

Certainly within the past 50 or 60 years, the river basin has come to be accepted as the appropriate physical and geographical unit for planning efficient water-resource management. At the same time, it is generally recognized that no two rivers are the same, that each basin is unique, and that the successful experiences of one basin cannot be literally or wholly applied to another. Although sometimes the basins are grouped into broad classes according to combinations of characteristics, it is generally understood that the development of each basin is a completely new venture.

### Equitable Financing

Equitable financing is still another part of the conceptual jigsaw puzzle. This term encompasses several aspects of water-resource financing, all of which revolve around one basic

"You can't take it with you" . . .

. . . but you can make sure it will do League work.

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1. Make a direct bequest to the League in your will.
2. Provide for a direct transfer.
3. Set up a trust.

Consult your bank and your attorney as to how best to carry out your wishes.

question: In light of social values as well as consideration of economic efficiency, how should the costs of national water-resource development be shared?

Answering this question requires a decision as to whether federal financing for a proposed water project is warranted in the first place (i.e., economic evaluation), and if so, how the costs should be shared among federal, state, local, and private interests (i.e., cost sharing).

The general public has a considerable stake in the quality of standards for the economic evaluation of water projects, not to mention the uniformity of their application.

Today most agencies use the formula known as a benefit-cost ratio. This is the relationship between the various economic benefits expected to accrue from a project and its cost in actual dollars. When the two are equal, the ratio is one to one, i.e., benefits are equal to the costs. A project is generally considered to be economically justified if the benefits are greater than the costs.

The common practice of using benefit-cost ratios was the outcome of many years of effort among the federal agencies to reach agreement. However, the agencies are still not in agreement as to what constitutes a benefit, how its money value should be determined, and whether secondary benefits should be included.

Furthermore, there are still differences of opinion as to the usefulness of benefit-cost ratios. When properly used, they are considered to sharpen the process of making choices. However, if the ratio is not soundly arrived at, a project can be blessed with an aura of respectability which it may not deserve. Furthermore, the intangible benefits and costs are necessarily subordinated to the tangible ones.

A recent issue of the *Monthly Review* of the Federal Reserve Bank of Kansas City, in an article entitled "Water Resource Development Proj-



ects," said: "It is possible that numerous socially justified development projects are not undertaken and that some projects are undertaken when superior alternatives are available simply because we lack the means of measuring accurately the general impact of a project upon the economy."

There is also a lack of clear-cut national policy in the field of cost sharing. For example, flood control and navigation projects are generally provided without reimbursement. Irrigation, industrial, and municipal water is sold under contracts designed to repay the federal government, usually within a 40-year period. Irrigation repayment is based on ability of farmers to carry the charges during the payout period, with any amount not covered being repaid from other sources—usually power revenues, the "paying partner" of irrigation.

Problems inherent in the idea of fair sharing of costs are well described by Professor John DeGrove:

"In the cost-sharing area, it is probably possible at present to find the greatest *theoretical* agreement as to what course future policy should take, since almost all recent studies agree that state and local interests should assume a larger share of the cost of water-resource projects. The general theory is that all local beneficiaries that can be identified should be expected to pay a part of the total costs of the project commensurate with the benefits they receive. Efforts to apply this theory in practice have met with only limited results. Federal agencies are still authorized, under conflicting policy, to apply different formulas to similar projects."

#### Coordinated Administration

Coordinated administration has long been a part of the reform vocabulary of those concerned with sound development of our water resources.

The basic questions are obvious. Can present agencies, set up for single purposes, succeed in planning for all uses of water, taking into account the needs of the entire basin as well as the planning for regional development? If not, should we try to move in the direction of creating, at the national level, agencies for coordination and review? If so, what should the mechanism be: Department of Natural Resources? reorganized Interior Department? impartial Board of Review?

### In Memoriam

November 11, 1958

**Miss Elizabeth J. Hauser**

Member of the National Board

1920-1932

January 8, 1959

**Mrs. Robert L. De Normandie**

Member of the National Board

1922-1924

A Founder of the League of  
Women Voters Education Fund

When an expert includes "coordinated administration" among his list of reforms, he usually has in mind more than one large coordinating mechanism, and less.

More, in the sense of coordination at different steps—whether planning or review, construction or operation and at different levels—at the national level, among existing federal agencies or congressional committees; at the river basin level, among field offices of federal agencies, state and local agencies, and river basin organizations (if any); at all levels of government in order to facilitate inter-governmental cooperation.

Less, in the sense that far fewer authorities today are holding out for coordinated administration as such, especially by the one-giant-mechanism approach, as the solution to all problems.

Some advocates of organizational shifts at the federal level maintain that any reforms must do more than reshuffle existing agencies, that their basic character must be changed.

Otherwise, this opinion holds that the agencies, tied as they are to particular sections of the country as well as to the single purposes for which they were created, would continue in the role of competitors rather than coordinators.

Furthermore, those who advocate significant organizational reforms argue that such changes might bring about a chain reaction in other areas: the breaking up of alliances between private interest groups and government agencies; the sparking of reform in congressional committee structure, as well as the awakening of the public to policy inconsistencies in the water-resource field.

However, over and over again pessimistic notes are sounded as to the possibilities for major reorganization of national water agencies. For example, Professor Otto Eckstein has the following to say:

"Since the strong political position of the agencies precludes a more drastic reorganization, it may be only realistic to try to promote increased coordination and adoption of common standards and no more. Yet it must be recognized that there will be severe limits to the reform which can be accomplished within such a framework. Any change which could endanger the over-all expenditure level of an agency or which would disturb the regional disbursement patterns is likely to be foredoomed. And coordination of programs is circumscribed by the necessity of keeping each agency's jurisdictional preserve intact."

Various study commissions ever since the conservation crusade of Theodore Roosevelt have pointed up the lack of coordination in the administration of our water resources. No reforms to date have made basic changes in the overlapping functions and policy differences of the 25 federal agencies concerned with water. We still have all 25; their functions expand if they change at all.

However, concern within the executive branch of the federal government did lead in 1946 to the establishment of the Federal Inter-Agency River Basin Committee ("Firebrick"). This was replaced in 1954 by the Inter-Agency Committee on Water Resources ("Icewater").

Some of the specific forms of water-resource machinery, and reform proposals, will be discussed in a later issue of THE NATIONAL VOTER.

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